

REMARKS

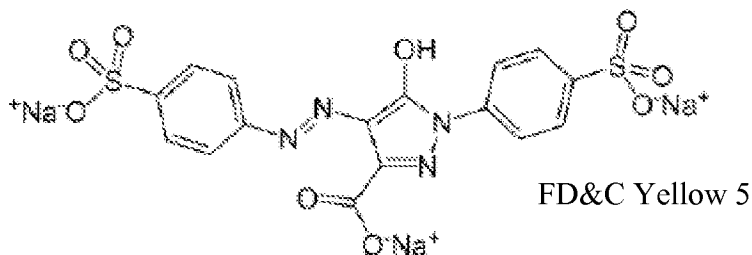
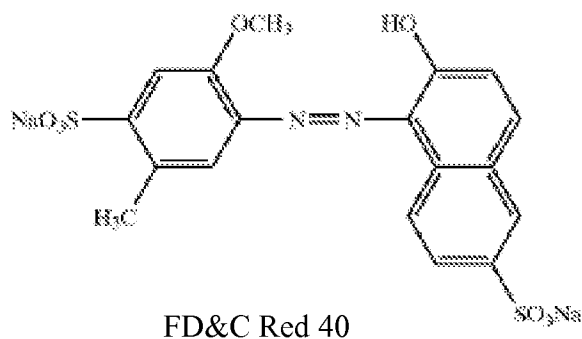
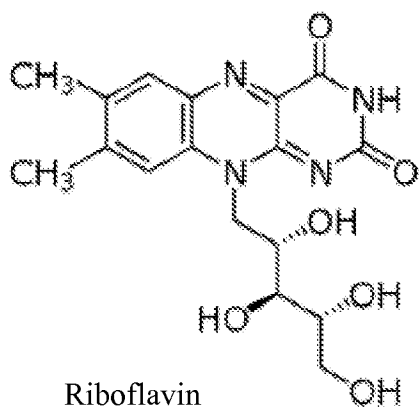
The Final Office Action mailed on January 5, 2010 has been carefully reviewed and this paper is responsive thereto. Claims 1, 3-7, 10-13, 15-21, 24 and 25 are pending. Claims 1, 3-7, 10-13, 15-21, 24 and 25 stand rejected. The Applicants respectfully submit that all claims are in condition for allowance in view of the remarks below.

Rejections Under 35 USC §103

Claims 1, 3-7, 10-11, 15-17, 19-21, 24 and 25 are rejected under 35 USC §103(a) as being unpatentable over Akihiko, et al., JP 2001323263 (“Akihiko”), for the reasons as stated in the Non-Final Office Action mailed 07/09/2009. The Applicants respectfully disagree and traverse the rejection. Akihiko does not teach or suggest either a food coloring composition or a stable colored beverage comprising at least “a synthetic color selected from the group consisting of Citrus Red No. 2, D&C Red No. 28, D&C Yellow No. 10, FD&C Blue No. 1, FD&C Blue No. 2, FD&C Green No. 3, FD&C Red No. 3, FD&C Red No. 40, FD&C Yellow No. 5, FD&C Yellow No. 6, ferrous gluconate, orange B, ultramarine blue, ultramarine green, ultramarine violet, ultramarine red and combinations thereof” and “a botanically derived color stabilizer is selected from the group consisting of rosmarinic acid, chlorogenic acid, cichoric acid, caffeic acid, coumarins, coumaric acid, cinnamoyl esters, cinnamic acid, chalcones, flavones, chromones, isoflavones, ferulic acid, sinapic acid, caftaric acid, eichloric acid, echinacoside and combinations thereof.”

The Office Action of 07/09/2009 acknowledged on page 4 that Akihiko does not disclose colors/pigments as recited in the instant claims, but contended that each of the originally claimed synthetic colors would be a functional equivalent to natural colors known in the art, thus it would have been obvious to substitute one for another. In addition, the Office Action contended on page 4 that regarding synthetic colors, Akihiko discloses an industrial riboflavin preparation. On pages 4-5, the Office Action alleged that “[o]ne of ordinary skill in the art would have been motivated to employ teachings of Akihiko et al and to solve the same problem (color fading) by applying known solution as disclosed by Akihiko et al (preventing color fading using botanically derived color stabilizers).

Akihiko is directed to preventing color fading of natural colors (e.g., curcmae rhizome coloring matter, riboflavin coloring matter, DEYUNARIERA carotene coloring matter, red yeast coloring matter, and ANATO coloring matter) using an extract of coffee beans. (See paragraph [0008] of the translation of Akihiko) Akihiko discloses in paragraph [0006] of the translation, however, that “natural coloring matter has various structures and it is of infinite variety by heat, light, etc. though what kind of device to fade and whether it discolors. Therefore, since only the antioxidizing effectiveness cannot necessarily explain fading prevention of natural coloring matter, there is no fading inhibitor generally applicable to any coloring matter.” Accordingly, Akihiko teaches that natural colors have a variety of unique structures and fade by different mechanisms, thus no one material is applicable as a fading inhibitor. This is very important because riboflavin (regardless of if it is obtained from a natural source or is prepared synthetically) has a significantly different chemical structure than other colors, in particular the synthetic colors recited in independent claims 1, 20 and 21. For example, the chemical structures of riboflavin, FD&C Red 40 and FD&C Yellow 5 are provided below for comparison:



The application specification teaches that natural colors are typically believed to fade by an oxidative mechanism (*See* paragraph [0008]), whereas synthetic colors may fade by a reductive chemical mechanism (*See* paragraph [0014]). Consequently, the issue is not whether or not natural and synthetic colors both have the function of adding color to products, but by what mechanism is fading inhibited for each individual color. Riboflavin has a significantly different chemical structure than either FD&C Red 40 or FD&C Yellow 5, thus it would not be expected that they would have similar properties or fade by the same mechanisms. Indeed, although slight changes between the chemical structures of two compounds may result in the compounds being considered obvious variants of each other, the chemical structures have to be extremely close to provide such an expectation of similar properties. A portion of MPEP 2144.09, which explains this concept further, is reproduced below:

Compounds which are position isomers (compounds having the same radicals in physically different positions on the same nucleus) or homologs (compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH₂- groups) are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties. *In re Wilder*, 563 F.2d 457, 195 USPQ 426 (CCPA 1977). See also *In re May*, 574 F.2d 1082, 197 USPQ 601 (CCPA 1978) (stereoisomers *prima facie* obvious).

Isomers having the same empirical formula but different structures are not necessarily considered equivalent by chemists skilled in the art and therefore are not necessarily suggestive of each other. *Ex parte Mowry*, 91 USPQ 219 (Bd. App. 1950) (claimed cyclohexylstyrene not *prima facie* obvious over prior art isohexylstyrene). Similarly, homologs which are far removed from adjacent homologs may not be expected to have similar properties. *In re Mills*, 281 F.2d 218, 126 USPQ 513 (CCPA 1960) (prior art disclosure of C₈ to C₁₂ alkyl sulfates was not sufficient to render *prima facie* obvious claimed C₁ alkyl sulfate).

The structures of natural colors, such as riboflavin, and the claimed synthetic colors are far from being isomers having the same empirical formula, let alone position isomers or homologs, and therefore are not sufficiently similar to be suggestive of each other with respect to solving the problem of color fading. There would have been simply no reason from the disclosure of Akihiko to suggest that the recited botanically derived color stabilizers could be effectively employed to inhibit fading of the recited synthetic colors based on inhibition of fading of riboflavin, merely because synthetic colors and riboflavin all function as colors. Independent claims 1 and 21 are therefore patentable over Akihiko. Claims 10-11, 15-17 and 19

depend from claim 1 and claims 3-7, 24 and 25 depend from claim 21 and are patentable over Akihiko for at least the same reasons as claims 1 and 21 and for the additional features recited therein.

Claims 12-13 are rejected under 35 USC §103(a) as being unpatentable over Akihiko in view of Coffee: Related Beverages (“Coffee”), for the reasons as stated in the Non-Final Office Action mailed 07/09/2009. The Applicants respectfully disagree and traverse the rejection. The Office Action of 07/09/2009 acknowledges on page 5 that Akihiko does not disclose the use of botanical extracts other than coffee bean extract. The Coffee reference is relied upon to disclose that dandelion root and hawthorn extract are known substitutes for coffee. The Office Action of 07/09/2009 contended on page 6 that “[s]ince Akihiko et al disclose pigment fading inhibitor comprising coffee bean extract as an active ingredient, and since dandelion root and hawthorn were well known coffee substitutes, one of ordinary skill in the art would have been motivated to substitute one coffee material with another coffee material (dandelion or hawthorn), since beans, dandelion root and hawthorn were well known coffee substitutes.”

The Applicants respectfully submit that simply because roasted dandelion root and roasted hawthorn may be used to make a beverage for a person to drink as a coffee substitute, there is absolutely no reason to expect that extracts of dandelion root or hawthorn would provide active ingredients equivalent to an extract of a green coffee bean for the purpose of inhibiting the fading of riboflavin color. Moreover, the Office Action of 07/09/2009 relies upon Applicants’ disclosure in the rationale for the obviousness rejection of claims 12 and 13. Although claims 12 and 13 do not recite dandelion or hawthorn, the Office Action contended on page 6 that “On pages 6-7 of Specification Applicants state that ‘In other preferred embodiments, the C6-C3 phenylpropenoic carbonyl compound is selected from cinnamoyl esters, coumarins, chalcones, flavones, chromones, isoflavones, and combinations thereof and may optionally be provided in the form of an extract of a botanical selected from horse chestnut extract, dandelion extract, eucalyptus extract, stringybark extract, saw palmetto extract, honeysuckle extract, hawthorn extract, noni fruit extract, red clover extract, orange extract, buckwheat extract, chamomile extract and combinations thereof.’ [0021].... Since COFFEE discloses dandelion root extract and

hawthorn extract, it also meets limitations of claims 12 and 13 according to Applicants' disclosure." It appears that the Office Action is contending that *the Applicants' discovery* that C6-C3 phenylpropenoic carbonyl compounds inhibit fading of synthetic colors, in combination with the disclosures of Akihiko and Coffee, render claims 12 and 13 obvious because dandelion extract, hawthorn and the other botanical extracts all comprise various C6-C3 phenylpropenoic structures. Applicants' own invention and teachings are not prior art and the rationale for the rejection is therefore improper. Without the Applicants' specification, which discloses the claimed C6-C3 phenylpropenoic carbonyl compounds as effective fading inhibitors, there is no recognition that a C6-C3 phenylpropenoic carbonyl structure is important within such inhibitors of fading of synthetic colors.

Claims 12-13 depend from claim 1, which is discussed in detail above with respect to Akihiko. Briefly, there would have been no expectation of success that the recited botanically derived color stabilizers could be effectively employed to inhibit fading of "a synthetic color selected from the group consisting of Citrus Red No. 2, D&C Red No. 28, D&C Yellow No. 10, FD&C Blue No. 1, FD&C Blue No. 2, FD&C Green No. 3, FD&C Red No. 3, FD&C Red No. 40, FD&C Yellow No. 5, FD&C Yellow No. 6, ferrous gluconate, orange B, ultramarine blue, ultramarine green, ultramarine violet, ultramarine red and combinations thereof" at least because the riboflavin color disclosed by Akihiko is significantly structurally different from synthetic colors. Moreover, Akihiko teaches that natural colors have a variety of unique structures and fade by different mechanisms, thus no one material is applicable as a fading inhibitor.

The cited art to Coffee is completely silent regarding inhibiting the fading of any colors in general or the recited synthetic colors in particular. For at least these reasons, Coffee does not remedy the deficiencies of Akihiko with respect to the independent claims. Consequently, claim 1 is patentable over Akihiko in view of Coffee. Claims 12-13 depend from claim 1 and are patentable over the proposed combination of Akihiko and Coffee for at least the same reasons as claim 1 and for the addition features recited therein.

Claim 18 is rejected under 35 USC §103(a) as being unpatentable over Akihiko in view of Taguchi, et al., Japanese Publication No. 2002138024 (“Taguchi”). The Applicants respectfully disagree. The Office Action acknowledged on page 2 that Akihiko does not disclose the use of botanical extracts other than coffee bean extract, however contended that Taguchi discloses a hair dye composition comprising botanical extracts and “[s]ince Akihiko et al disclose pigment fading inhibitor comprising coffee bean extract as an active ingredient, and since Taguchi et al discloses coffee extract or chestnut extract as part of a stable dyeing composition, one of ordinary skill in the art would have been motivated to substitute coffee extract with chestnut extract, since Taguchi et al discloses that coffee and chestnut extracts are functional equivalents in the stable dyeing composition comprising various coloring botanical extracts.” (Pages 2-3 of the Office Action dated 01/05/2010) The Applicants respectfully submit that this is a mischaracterization of the disclosure of Taguchi.

Taguchi is directed to a hair dye composition, and the translation states that the hair dye comprises “staining components obtained from powdered extract of root, stalk, flower, fruit or seed of plants, such as Rubia akane, turmeric, sappanwood, cork tree, Sophora japonica, cochineal, chestnut, onion and/or coffee.” (Page 2 of the translation) The hair dye composition further includes a metallic substance and a mordant including an aqueous solution of primary and secondary treating agents containing a reducer and alkali chemicals, and an oxidizing agent, respectively. Accordingly, Taguchi discloses that the botanical extracts are the dye colors, thus the function of coffee extract and chestnut extract in the invention of Taguchi are as natural colors, not as inhibitors of color fading.

Claim 18 depends from claim 1, which is discussed in detail above with respect to Akihiko. Briefly, there would have been no expectation of success that the recited botanically derived color stabilizers could be effectively employed to inhibit fading of “a synthetic color selected from the group consisting of Citrus Red No. 2, D&C Red No. 28, D&C Yellow No. 10, FD&C Blue No. 1, FD&C Blue No. 2, FD&C Green No. 3, FD&C Red No. 3, FD&C Red No. 40, FD&C Yellow No. 5, FD&C Yellow No. 6, ferrous gluconate, orange B, ultramarine blue, ultramarine green, ultramarine violet, ultramarine red and combinations thereof” at least because the riboflavin color disclosed by Akihiko is significantly structurally different from synthetic

colors. Moreover, Akihiko teaches that natural colors have a variety of unique structures and fade by different mechanisms, thus no one material is applicable as a fading inhibitor.

The cited art to Taguchi is completely silent regarding inhibiting the fading of synthetic colors, and provides no explanation of what components of the hair dye composition result in the disclosed “excellent time-dependent stability, durability, color-fastness, quality and adhesivity on applied hairs” of the plant derived staining components. (Page 3 of the translation) Accordingly, Taguchi provides no guidance regarding inhibiting the fading of synthetic colors. For at least these reasons, Taguchi does not remedy the deficiencies of Akihiko with respect to the independent claims. Consequently, claim 1 is patentable over Akihiko in view of Taguchi. Claim 18 depends from claim 1 and is patentable over the proposed combination of Akihiko and Taguchi for at least the same reasons as claim 1 and for the addition features recited therein.

CONCLUSION

Applicant respectfully requests reconsideration of the pending claims and a finding of their allowability. A notice to this effect is respectfully requested. Please feel free to contact the undersigned should any questions arise with respect to this case that may be addressed by telephone.

Respectfully submitted,

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